UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,908	10/13/2005	Ulrich Weidmann	HAM P2073	6964

7590 08/09/2007

HUNTSMAN ADVANCED MATERIALS AMERICAS INC.
10003 Woodloch Forest Drive
The Woodlands, TX 77380

EXAMINER
ARNBERG, MEGAN C

ART UNIT	PAPER NUMBER
1709	

MAIL DATE	DELIVERY MODE
08/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,908	WEIDMANN, ULRICH	
	Examiner	Art Unit	
	Megan Arnberg	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *16 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-11 and 13-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-11 and 13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what component B) is, whether the 1,4-n-pentyl-, etc. modifies the phenol or the bisphenol, and whether the 1,4- precedes all of the components, i.e. if 1,4-n-octyl-phenol can be component B). For the purpose of further examination, component B) is taken to mean 1,4-n-pentylphenol, n-hexylphenol, n-heptylphenol, n-octylphenol, n-nonylphenol, n-decylphenol, or O, O'-diallyl-bisphenol A.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Das et al. (U.S. 5,922,448) in view of Blyakhman (U.S. 5,591,811).

Regarding claims 1-4: Das et al. teaches a phenol (abstract) and an imidazole catalyst (col. 8 lines 44-54). Das et al. further teaches adding 15-25% by weight of the imidazole catalyst to a phenol, which is a weight ratio of 15:85 to 25:75 (col. 9 lines 61-67 and col. 8 lines 44-46). Das et al. does not teach using the imidazole of general formula (I). However, Blyakhman teaches a compound of general formula (I) of the instant application where R1, R2, and R3 are each independently of the other hydrogen; alkyl of 1 to 12 carbon atoms; cycloalkyl of 3 to 12 carbon atoms, which could be substituted by alkyl groups of 1 to 4 carbon atoms; cycloalkyl-alkyl of 4 to 20 carbon atoms which can be substituted by alkyl groups of 1 to 4 carbon atoms; aryl of 6 to 10 carbon atoms, which could be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; phenylalkyl of 7 to 15 carbon atoms, which could be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; alkenyl of 3 to 12 carbon atoms; alkynyl of 3 to 12 carbon atoms; aromatic or aliphatic acyl group of 3 to 12 carbon atoms or alkyl or aryl of 3 to 12 carbon atoms containing a cyano group or a halogen; R4, R5, R6, R7, R8, and R9 are each

independently of the other hydrogen; alkyl of 1 to 12 carbon atoms; cycloalkyl of 3 to 12 carbon atoms, which can be substituted by alkyl groups of 1 to 4 carbon atoms; cycloalkyl-alkyl of 4 to 20 carbon atoms, which can be substituted by alkyl groups of 1 to 4 carbon atoms; aryl of 6 to 10 carbons atoms, which can be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; phenylalkyl of 7 to 15 carbon atoms, which can be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; alkenyl of 3 to 12 carbon atoms; alkynyl of 3 to 12 carbon atoms; halogen; alkoxy of 1 to 12 carbon atoms; or hydroxyl (formula (I) and col. 2 line 59- col. 3 line 16). Das et al. and Blyakhman are combinable because they are both concerned with the same field of endeavor, namely epoxy resins containing imidazoles and phenols. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the imidazole taught in Blyakhman with the composition of Das et al. and would have been motivated to do so because 1-imidazolylmethyl-2naphtols are effective catalysts for curing epoxy resins and provide epoxy resin systems with prolonged room temperature stability and fast curing as stated by Blyakhman (abstract).

Regarding claim 5: Das et al. teaches a nonylphenol for the phenol component (col. 9 line 67).

Regarding claim 6: Das et al. teaches the weight ratio of 15:85 to 25:75 (col. 9 lines 61-67 and col. 8 lines 44-46).

Regarding claim 13: Das et al. teaches adding an epoxy resin (abstract), curing agent/catalyst (col. 8 lines 29-54), a phenol and an imidazole at a weight ratio of imidazole to phenol of 15:85 to 25:75 to make a curable composition (col. 9 line 40-col.

10 line 7). Das et al. does not teach adding the compound of general formula (I). However, Blyakhman teaches adding the compound of formula (I) to an epoxy resin (col. 4 lines 54-58), a curing agent (col. 5 lines 41-48) and a phenol (col. 5 lines 41-48). At the time of the invention a person having ordinary skill in the art would have found it obvious to add in the imidazole of general formula (I) with the composition of Das et al. and would have been motivated to do so because 1-imidazolylmethyl-2naphtols are effective catalysts for curing epoxy resins and provide epoxy resin systems with prolonged room temperature stability and fast curing as stated by Blyakhman (abstract).

Regarding claim 14: Das et al. further teaches dissolving components before curing at a temperature of 65-75 °C (col. 9 lines 39-52).

Claims 8-11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blyakhman in view of Das et al. and Klein et al. (U.S. 6,245,835).

Regarding claim 8: Blyakhman teaches the compound of formula (I) as set forth above in the amount of 2-25 parts by weight. Blyakhman further teaches an epoxy resin (abstract) made of a bisphenol A, which has 2 epoxy functional groups per molecule at a molecular weight range of 1000 to 1500 (col. 5 lines 5-10). This corresponds to an epoxide equivalents range of 0.5 to 0.75 epoxide equivalents/kg. Blyakhman also teaches adding a curing agent for the epoxy resin and one or more additives (col. 5 lines 41-53). Blyakhman does not teach a phenol at the weight ratio of imidazole to phenol of 10:90 to 80:20. However, Das et al. teaches adding 15-25% by weight of the imidazole catalyst to a phenol, which is a weight ratio of 15:85 to 25:75 (col. 9 lines 61-

67 and col. 8 lines 44-46). At the time of the invention a person having ordinary skill in the art would have found it obvious to add a phenol at this weight ratio and would have been motivated to do so because at this weight ratio the phenol cures the epoxy resin and increases thermal stability and overall mechanical properties.

Blyakhman also does not teach the curing agent to have 0.5 to 1.5 functional groups per epoxide group. However, Klein et al. teaches a curing agent for an epoxy resin having 0.5 to 2 functional equivalents per epoxy group (col. 11 lines 38-46). Blyakhman and Klein et al. are combinable because they are both concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the functional group ratio of Klein et al. with the composition of Blyakhman and would have been motivated to do so because with this ratio of functional groups the composition will not have much excess unreacted epoxy resin or curing agent, which would lead to decreased viscosity.

Regarding claim 9: Blyakhman and Klein et al. both further teach a polyamine curing agent (Blyakhman col. 5 lines 41-48 & Klein et al. col. 16 lines 14-49).

Regarding claim 10: Klein et al. further teaches a polyoxypropylenediamine curing agent (col. 16 line 38). At the time of the invention a person having ordinary skill in the art would have found it obvious to use a polyoxypropylenediamine as a polyamine curing agent and would have been motivated to do so because polyoxypropylenediamine is more reactive curing agent for epoxy resins.

Regarding claim 11: Blyakhman teaches using cylcoaliphatic epoxy resins (col. 3 lines 17-48).

Regarding claim 15: Das et al. teaches a prepreg comprising the claimed composition (col. 10 lines 40-60). At the time of the invention a person having ordinary skill in the art would have found it obvious to make a prepreg with the composition and would have been motivated to do so because it is known in the art that an application for epoxy resins is prepregs.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6, 8-11, and 13-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13-

25 of copending Application No. 10/552,902 in view of Blyakhman, Klein et al., and Das et al. The copending application teaches adding a phenol to the instant composition containing the imidazole, to the instant composition containing the epoxy resin, to the instant method for making the curable composition, and to a prepreg comprising the instant curable composition. Blyakhman and Klein et al. teach adding a phenol to the compositions and method of making. Specifically Blyakhman teaches adding phenol-formaldehyde resins to the composition (col. 5 lines 41-48), and Klein et al. teaches adding a polyhydroxy hydrocarbon, which can be a bisphenol compound (col. 4 lines 53 - col. 5 line 2). Das et al. teaches adding a phenol to the composition making a prepreg (col. 10 lines 40-60).

The copending application and Blyakhman are combinable because they both are concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. The copending application and Klein et al. are combinable because they are both concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. The copending application and Das et al. are combinable because they are both concerned with the same field of endeavor, namely prepregs made with epoxy resins containing phenol and imidazole. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the phenol with the composition and would have been motivated to do so because the phenol is a latent curing accelerator, as taught by Blyakhman (col. 5 lines 41-48).

This is a provisional obviousness-type double patenting rejection.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan Arnberg whose telephone number is (571) 270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Megan Arnberg MCA
August 1, 2007

MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER
03/Aug/07